WHAT IS CLAIMED IS:

1. A device for measuring analyte in a biological fluid, the device comprising:

a housing and a sensor associated with the housing, wherein the sensor comprises an apparatus for determining the amount of an analyte in a biological sample, wherein the apparatus comprises a membrane assembly, wherein the membrane assembly comprises an angiogenic layer for promoting adequate microcirculatory delivery of the analyte and oxygen to the sensor, and wherein the sensor is convex with reference to the housing.

2. The device of claim 1, wherein the angiogenic layer is selected from the group consisting of expanded polytetrafluoroethylene, polyester, hydrophilic polyvinylidene fluoride, mixed cellulose esters, polyvinyl chloride, polypropylene, polysulfone, and polymethacrylate.

3. The device of claim 1, further comprising a radiotelemetry device for transmitting data, wherein the radiotelemetry device is situated within the housing.

4. A device for measuring an analyte in a biological fluid, the device comprising:

a sensor, the sensor comprising an apparatus for determining an amount of an analyte in a biological sample, wherein the apparatus comprises a sensor interface dome, wherein the sensor interface dome comprises a membrane assembly, wherein the membrane assembly comprises an angiogenic layer for promoting adequate microcirculatory delivery of the analyte and oxygen to the sensor.

5. The device of claim 4, wherein the angiogenic layer is selected from the group consisting of expanded polytetrafluoroethylene, polyester, hydrophilic polyvinylidene fluoride, mixed cellulose esters, polyvinyl chloride, polypropylene, polysulfone, and polymethacrylate.

6. A wholly implantable glucose monitoring device, the device comprising:

a) a housing and a sensor, wherein the sensor is situated on the housing, wherein the sensor comprises a member for determining an amount of glucose in a biological fluid of a tissue of a host, and wherein the tissue of the host is adjacent to a first side of the housing;

b) an angiogenic layer situated on said sensor, wherein the angiogenic layer promotes adequate microcirculatory delivery of analyte and oxygen to the sensor; and

c) a securing member for securing the device to the tissue of the host, wherein the securing member is situated on the first side of the housing.

7. The device of claim 6, wherein the securing member comprises a material selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts and expanded polytetrafluoroethylene.

8. The device of claim 6, wherein the angiogenic layer is selected from the group consisting of expanded polytetrafluoroethylene, polyester, hydrophilic polyvinylidene fluoride, mixed cellulose esters, polyvinyl chloride, polypropylene, polysulfone, and polymethacrylate.

9. The device of claim 6, wherein the glucose determining member comprises an electrochemical cell.

10. The device of claim 6, wherein the glucose determining member measures surface plasmon resonance.

11. The device of claim 6, wherein the glucose determining member measures surface acoustic waves.

12. The device of claim 6, wherein the glucose determining member measures optical absorbance in the long wave infrared region.

13. The device of claim 6, wherein the glucose determining member measures optical rotation of polarized light.

14. The device of claim 6, wherein the housing comprises a second side situated opposite to the first side, wherein the second side is substantially smooth.

15. The device of claim 6, wherein the securing member is situated substantially only on the first side of the housing.

16. The device of claim 6, wherein the securing member is situated on more than one side of said housing.

17. A device for measuring glucose in a tissue of a host, the device comprising:

a wholly implantable device comprising a sensor having an interface for communicating with a tissue of the host, the interface comprising an angiogenic layer for promoting adequate microcirculatory delivery of glucose and oxygen to the sensor, and an outermost stability layer for promoting formation of a stable foreign body capsule structure.

18. The device of claim 17, wherein the angiogenic layer is selected from the group consisting of expanded polytetrafluoroethylene, polyester, hydrophilic polyvinylidene fluoride, mixed cellulose esters, polyvinyl chloride, polypropylene, polysulfone, and polymethacrylate.

19. The device of claim 17, wherein the outermost stability layer comprises a polyester.

20. A device for measuring an analyte in a biological sample, the device comprising:

a sensor, the sensor comprising an apparatus for determining an amount of analyte in a biological sample, the apparatus comprising a homogeneous enzyme membrane adapted to: 1) control a flux of oxygen and the analyte, 2) enyzmatically react with the analyte, and 3) restrict passage of a species that interferes with a measurement of the analyte.

21. The device of claim 20, wherein the membrane assembly is selected from the group consisting of polyethylene, polyvinylchloride, tetrafluoroethylene, polytetrafluoroethylene, polypropylene, polyacrylamide, polymethyl methacrylate, silicone polymer, polycarbonate, collagen, polyurethane, polyurethane block copolymers, cellulose acetate, and cellulosic polymer.

22. The device of claim 20, wherein the enzyme membrane comprises a resistance layer, wherein the resistance layer restricts transport of glucose through the enzyme membrane.

23. The device of claim 22, wherein the resistance layer comprises a polymer membrane with an oxygen-to-glucose permeability ratio of approximately 200:1.

24. The device of claim 20, wherein the enzyme membrane comprises an enzyme layer, wherein the enzyme layer comprises glucose oxidase.

25. The device of claim 20, wherein the enzyme membrane comprises an interference layer, wherein the interference layer comprises a hydrophobic membrane substantially permeable to hydrogen peroxide.

26. The device of claim 25, wherein the interference layer comprises a hydrophobic membrane substantially impermeable to a chemical composition comprising a molecular weight substantially greater than a molecular weight of hydrogen peroxide.

27. The device of claim 20, wherein the enzyme membrane comprises an electrolyte layer, wherein the electrolyte layer comprises a semipermeable hydrophilic coating.

28. The device of claim 27, wherein the electrolyte layer comprises a curable copolymer, wherein the curable copolymer comprising a urethane polymer and a hydrophilic film-forming polymer.

29. A device for measuring glucose in a biological fluid, the device comprising:

a sensor, the sensor comprising an apparatus for determining an amount of glucose in a biological sample, the apparatus comprising a membrane assembly, the membrane assembly comprising an angiogenic layer, a resistance layer, an enzyme layer, and an interference layer.

30. The device of claim 29, wherein the resistance layer restricts transport of glucose through the membrane assembly.

31. The device of claim 30, wherein the resistance layer comprises a polymer membrane with an oxygen-to-glucose permeability ratio of approximately 200:1.

32. The device of claim 29, wherein the enzyme layer comprises glucose oxidase.

33. The device of claim 29, wherein the interference layer comprises a hydrophobic membrane substantially permeable to hydrogen peroxide.

34. The device of claim 33, wherein the interference layer comprises a hydrophobic membrane substantially impermeable to a chemical composition comprising a molecular weight substantially greater than a molecular weight of hydrogen peroxide.

35. The device of claim 29, wherein the electrolyte layer comprises a semipermeable hydrophilic coating.

36. The device of claim 35, wherein the electrolyte layer comprises a curable copolymer, wherein the curable copolymer comprises a urethane polymer and a hydrophilic film-forming polymer.

37. The device of claim 29, wherein the angiogenic layer is selected from the group consisting of expanded polytetrafluoroethylene, polyester, hydrophilic polyvinylidene fluoride, mixed cellulose esters, polyvinyl chloride, polypropylene, polysulfone, and polymethacrylate.

38. The device of claim 29, wherein the membrane assembly is selected from the group consisting of polyethylene, polyvinylchloride, tetrafluoroethylene, polytetrafluoroethylene, polypropylene, polyacrylamide, polymethyl methacrylate, silicone polymer, polycarbonate, collagen, polyurethane, polyurethane block copolymers, cellulose acetate, and cellulosic polymer.

39. An analyte-measuring device suitable for implantation in a host, the device comprising:

a housing, wherein the housing comprises a securing member for preventing movement of the device after implantation; and

a sensor for determining an amount of an analyte in the host.

40. The analyte-measuring device of claim 39, further comprising an electrolyte layer, wherein the electrolyte layer maintains hydrophilicity on a surface of the sensor.

41. The analyte-measuring device of claim 39, further comprising an interference layer, wherein the interference layer restricts passage of a species that interferes with a measurement of the analyte.

42. The analyte-measuring device of claim 39, further comprising an enzyme layer, wherein the enzyme layer comprises a component for catalyzing an enzyme reaction.

43. The analyte-measuring device of claim 39, further comprising a resistance layer, wherein the resistance layer controls a flux of oxygen and the analyte through the membrane assembly.

44. The analyte-measuring device of claim 39, further comprising a bioprotective layer, wherein the bioprotective layer blocks passage of macrophages.

45. The analyte-measuring device of claim 39, further comprising an angiogenic layer, wherein the angiogenic layer promotes development of blood vessels microcirculation.

46. The analyte-measuring device of claim 39, further comprising a stability layer, wherein the stability layer promotes formation of a stable foreign body capsule structure.